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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/079,101 05/14/98 LYNCH

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BEYER WEAVER & THOMAS LLP
P.O. BOX 778
BERKELEY CA 94704-0778

EXAMINER

ART UNIT	PAPER NUMBER
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2613

DATE MAILED:

10/09/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/079,101

Applicant(s)
William Lynch et al.

Examiner
Shawn An

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2613



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-34 is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-34 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____
- ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s). _____

16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 3

20) ☐ Other:

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DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. Claim 33 is objected to because of the following informalities: On page 3, line 10, "decompressed blocks" should be changed to --compressed blocks--. correction is required.
3. Claim 10 is objected to because of the following informalities: On page 33, line 9, "wherein and wherein" should be changed to --wherein--. correction is required.

Drawings

4. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

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6. Claims 1-4, 7, 14-16, 19, 25-28, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Lei (6,130,911).

Lei discloses a method/integrated circuit for compression of video information comprising: receiving a first portion(s) of video information (Fig. 4, 60); transforming the first portion of the image (64); temporarily compressing the first portion (68 or 76); temporarily storing the compressed first portion(s) until a corresponding second portion(s) is/(are) received (78); decompressing the compressed first portion(s) (82); combining/comparing the first and the second portion(s) to produce a resultant portion(s) representing information in a compressed form that represent the first and the second video images (60 to 64); and encoding the resultant portion(s) to produce compressed video information (66 or 68), whereby the method uses relatively less temporary storage as specified in claims 1-2, 4, 14, 16, 25-26, and 28.

Regarding claims 3, 15, and 27, Lei discloses compressing the second portion (66 or 76), temporarily storing the compressed second portions (78), and decompressing the compressed portion for combination with the decompressed first portion (82) as specified.

Regarding claims 7, 19, and 31, it is considered an inherent feature to perform a comparison of the first and second portion in a bit serial fashion.

7. Claims 32 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Lei (6,272,180 B1).

Lei discloses a method/integrated circuit of decompressing compressed video information comprising: receiving a compressed bitstream of video information (Fig. 4, Fig. 6, Compressed Bitstream); performing a reverse combination on the compressed portion to produce two portions representing the compressed portion in a less compressed form (96); temporarily storing the two portions of video information (78); decompressing two portions of video information to produce a decompressed portion (76); and outputting the decompressed portion of video information (Fig. 6, Decoded Block) as specified in claims 32 and 34.

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Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 8-10, 12-13, 20-21, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei (6,130,911) in view of Liu et al (5,970,233).

Lei discloses a method for compression of video information comprising: receiving a first portion of video information (Fig. 4, 60); transforming the first/second portion of the image (64); compressing the first/second portion (68 or 76); temporarily storing the compressed first/second portion; decompressing the compressed first portion (82); comparing the first and the second portion to produce a resultant portion representing information from the first and the second portions (60 to 64); and encoding the resultant portion to produce compressed video information, whereby a reduction in temporary storage is achieved as specified in claims 8-10. Lei does not specifically disclose partially decoding an encoded first/second portion. However, Liu et al discloses conventionally well known concept of partially decoding an encoded first/second portion (Fig. 5, 503) as specified. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for compression of video information as taught by Lei to incorporate the well known concept of partially decoding the encoded first/second portion as taught by Liu et al so that the Haar transform can be performed in the transform domain.

Regarding claim 12, Lei discloses performing a Haar comparison of the first and second portions (col. 8, lines 4-10) as specified.

Regarding claims 13 and 24, it is considered an inherent feature to perform a comparison of the first and second portion in a bit serial fashion.

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Lei discloses an integrated circuit for compression of video information comprising: an incoming block storage unit (Fig. 1); a compression module (Fig. 4, 76) for temporary compression of blocks; temporarily block storage (78) for storage of compressed blocks; a decompression unit (82) for decompressing the compressed blocks; a comparison unit (64) for comparing decompressed blocks to produce comparison information representing the first and second video images, whereby a reverse transform need not be performed upon the blocks; and a compression unit (68 or 76) for compressing the comparison information to produce a compressed stream of bits as specified in claims 20 and 21. Lei does not specifically disclose partially decompressing the compressed blocks. However, Liu et al discloses conventionally well known concept of partially decompressing the compressed blocks (Fig. 5, 503) as specified. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an integrated circuit for compression of video information as taught by Lei to incorporate the well known concept of partially decompressing the compressed blocks as taught by Liu et al so that the Haar transform can be performed in the transform domain.

Regarding claim 23, Lei discloses performing a Haar comparison of the first and second video images (col. 8, lines 4-10) as specified.

10. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lei (6,130,911) in view of Koppelmans et al (5544266).

Lei discloses an integrated circuit for decompression of video information comprising: a decompression unit (92) that decompresses a compressed stream of bits; a reverse comparison unit for producing decompressed blocks of the first and second video image; temporarily block storage (78) for storing decompressed blocks; a decompression module for decompression of the compressed blocks (76); and an outgoing block storage unit (Fig. 4, arrow after 78) as specified in claim 33. Lei does not specifically disclose partially compressing the decompressed blocks. However, Koppelmans et al discloses conventionally well

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known concept of partially compressing the decompressed blocks (col. 7, lines 55-59) as specified. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing an integrated circuit for decompression of video information as taught by Lei to incorporate the well known concept of partially compressing the decompressed blocks as taught by Koppelmans et al in order to allow a reduction in a temporarily storage.

11. Claims 5, 17, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei as applied to claims 1, 14, and 25 above, respectively, and further in view of Goertzen (6,289,132 B1).

Lei fail to disclose transforming the first portion using a modified 2-6 Biorthogonal filter. However, Goertzen discloses transforming using a conventional Biorthogonal filter (col. 14, lines 1-4) as specified in claims 5, 17, and 29. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for compression of video information as taught by Lei to incorporate the use of Biorthogonal filter as taught by Goertzen to modify such that the video information may be compressed without producing substantial blocking artifacts as specified.

12. Claims 6, 18, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei as applied to claims 1, 14, and 25 above, respectively, and further in view of Liu et al (5,970,233).

Lei discloses performing a Haar comparison of the first and second portions (col. 8, lines 4-10) and encoding the resultant portion (76) as specified in claims 6, 18, and 30. Lei does not specifically disclose partially decoding an encoded first portion. However, Liu et al discloses conventionally well known concept of partially decoding an encoded first portion (Fig. 5, 503) as specified. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for compression of video information as taught by Lei to

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incorporate the well known concept of partially decoding the encoded first portion as taught by Liu et al so that the Haar transform can be performed in the transform domain.

13. Claims 11 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lei and Liu et al as applied to claims 8 and 20 above, respectively, and further in view of Goertzen (6,289,132 B1).

Lei fails to disclose transforming the first portion using a modified 2-6 Biorthogonal filter. However, Goertzen discloses transforming using a conventional Biorthogonal filter (col. 14, lines 1-4) as specified in claims 11 and 22. Therefore, it would have been obvious to a person of ordinary skill in the relevant art employing a method for compression of video information as taught by Lei to incorporate the use of Biorthogonal filter as taught by Goertzen to modify such that the video information may be compressed without producing substantial blocking artifacts as specified.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.


A) Agarwal (5,812,788), Encoding/decoding video signals using quantization tables based on explicitly encoded base and scale matrices.

B) Schwartz et al (6,058,215), Reversible DCT for lossless-lossy compression.

15. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn An whose telephone number (703) 305-0099 and schedule are Monday through Thursday and not at work on Friday.


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800



SSA

October 3, 2001